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when once opposed he never leaves his enemy but with victory or death. . If any emblem deserves respect, I think it is that of our harp, which in early ages was always strung for the congratulations of love and friendship; and at other times when necessary, for the purpose of rousing the nation to a sense of their danger against the invasions of a foreign enemy. Such an emblem or coat of arms, is to me a thousand times more significant than the whole race of ferocious beasts with all their grim and terrific appearances.

I am Gentlemen,
Your humble servant,
Ballygowan. P. M'P.

For the Belfast Monthly Magazine.

HINTS FOR ASTRONOMICAL PUPILS.

(*From Frend's Evening Amusements.*)
Continued from Vol. XII. page 452.

DURING the month of August the daily height of the sun on the meridian diminishes faster than it did in July, and it may afford some amusement to observe, by an easy experiment, the rate of this decrease. Take a straight stick about a yard long, and at the end of it make a hole, as is usual for the tassel of a walking stick, only let it be larger. Cross this hole in the direction of the stick: fix on with wax a hair, and across this hair fix on another hair with wax, so that the point where the two hairs cross each other shall be the centre of the hole. Now fix the stick in the ground, and the hole being at the other end, and placed opposite the sun, there will be on the ground the shadow of the stick opposite to the sun, and at the end of the shadow an oval, formed by the rays passing through the hole of the stick; and the centre of this oval will be marked by the shadow of the hairs, which cross each other on the hole of the stick. As the sun appears to move, this centre will move on the ground; and if you note its motion a little before and after noon, you may mark with great ease, on the ground a line, which shall run from south to north, or be a meridian line.

To do this properly draw with a string and a piece of chalk an arc of a circle about eleven o'clock, the string being fixed to the bottom of the stick, and the point of the chalk fixed on the centre of the oval formed in the shadow of the stick. At half past eleven do the same thing, then about half past twelve, observe the centre, and you will see it near the arc last made. When it comes upon the arc, mark the place; and draw a line from this place to the beginning of the arc, or the place where the centre was at half past eleven. Divide this line into two equal parts, and a line drawn from the bottom of the stick through the middle of the divided line, will be the line on which the centre of the oval is, when the centre of the Sun is upon the meridian.

At one o'clock observe the place of the centre, which will now be near the arc first made, and when it is upon the arc, mark the place; and draw a line from this place to the beginning of the arc, or the place where the centre of the oval was at eleven o'clock; then this line, if you have drawn every thing right, will be divided into two equal parts by the line drawn from the bottom of the stick.

If the ground is rough, and the arcs of the circles are ill drawn, the line drawn from the stick will be less exact; but by trying this play a few times, young persons will grow expert at it, and, instead of making two, they may make several arches. Thus, one at eleven, another at a quarter past, a third at three quarters past, and so on, marking the place where the centre of the oval is, either before or after eleven, and, as its place is changed, making new arcs. Then after twelve, as the centre of the oval comes upon any of the arcs, mark the places; and, joining by line these places with the beginnings of their respective arcs, you may now bisect the lines, and the line passing through the points of bisection will pass through the bottom of the stick. Thus we shall have, if not an exact meridian line upon the ground, one sufficiently exact to answer our purpose; and we may observe by it, when the sun is upon this line, and also by marking the spot every day determined by the centre of the oval, we may take notice how its middle-day height is constantly diminishing. This little contrivance might, in a school, suggest many curious and useful questions.

Round the stick as a centre draw a complete circle. Then the meridian line drawn on the ground will cut this circle, and if produced both ways, will cut this circle in two points, the north and the south points. We may now observe at what point the sun rises or sets, as there will be marked, at sun rising or setting, a point by the shadow of the stick on the circle, and the opposite point to it is the point where is the sun in rising or setting. Thus suppose the shadow of the stick at sunset to cut the circle at the point south by east, then the sun is setting on the horizon at the point north by west. If the shadow of the stick cuts the circle in the point east-north-east, then the sun is setting on the horizon at the point west-south-west. At any time also during the day, by looking at the shadow of the stick on the circle, you may tell at what point of the heavens the sun is, and you may notice the unequal time employed in the shadow passing from one point to another. At night the line we have thus drawn will serve as our guide to determine what stars are at any time upon the meridian.

The difference of the noontide height of the sun on the 27th of December, and on Midsummer-day, is forty-seven degrees, and, of course, the rays of the sun cannot strike the ground with so much strength in winter as in summer.*

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* As the sun's noontide height, and its stay above the horizon are daily decreasing during the month of July, it may naturally excite wonder, that the heat does not diminish in the same manner, and that July should be in general much hotter than the preceding month. A slight degree of attention to what passes every day will obviate surprise. At noon the height of the sun is always the greatest: his rays considered in themselves, are the most powerful; but the heat is not so great as when, in two hours more, his height and their power are much diminished. The fact is, he has been communicating heat to the earth from his rise till noon: in the hour from one till two he communicates less heat, than in the hour from twelve to one; but in the first hour of the afternoon, there is another addition made to the heat that there was at twelve; and in the second, an addition, though a less addition than the former, to the heat there was at one. A much less addition is made in the third hour, after which the usual temperature of the earth and air begin to prevail, and the heat gradually diminishes. Thus the heat of the sun in the winter months was not sufficient to overcome the cold produced in the nights; as his power increased, he had a greater power of cold to contend with, and his victory was scarcely completed, when his power to communicate heat began to diminish: but the subdued enemy had no means of recruiting his strength, till the

Now the difference of the distances of the sun on these two days is not very great, in comparison of the whole distance from the sun; and hence, though the earth is nearer to the sun in winter than in summer, its heat is to us the greatest in the latter season. You may, any morning at breakfast make this clear to your imagination, whilst you are holding a piece of bread to toast by the fire. If it is held upright before the fire, it will soonest be toasted; and, as you incline towards you, the part nearest to the fire will be burnt, when that nearest to you is scarcely heated. According to the degrees of inclination the effects will be different, and these degrees of inclination may show you the effects of the rays of the sun on different regions of the earth.

When the toast is held upright, the heat of the fire strikes it in the strongest manner: and so does the heat of the sun strike those parts of the earth, where it is directly over the heads of the inhabitants. When the toast is inclined, then it receives the heat of the fire in the same manner as the other regions of the earth do the heat of the sun at noon. In summer time the earth is farthest from the sun; but the inclination of the rays of the sun on our country, is represented by the action of the fire on toast, held nearly in an upright state. In winter the earth is nearer; but then the rays of the sun strike our country, as the fire does the toast, when it is held in a posture very much inclined. They who live in the southern part of the earth, have, during our winter, the sun nearer them, and also its rays striking them more forcibly; and in summer they are not only farther removed from the sun, but also his rays strike them in a less forcible manner. Hence their summer ought to be hotter, and their winter colder, than ours; but so many other causes interfere in the production of heat and cold, that this difference affecting the power of the sun's rays is of little consequence.

For the Belfast Monthly Magazine.

RAMBLE OF AN INQUISITIVE TRAVELLER.

(Continued from Vol. XII. page 279.)

"THE utmost harmony now prevailed, and the serjeant having ordered in a bowl of punch, we drank his majesty's health again, and again; the glass passing briskly I assure you. This good cheer seemed to cement our jovial friendship, and the serjeant soon became very talkative, and recounted many heroic exploits of his younger years; he was so very affable as to permit me to wear his cap, which I esteemed a very great mark of condescension. My father shared fully in the passing mirth, and sung, or rather vociferated, several songs in praise of flowing bowls, full bumpers, sparkling glasses, and generous wine. Indeed your humble servant was tickled with his good fortune; my whole frame was, as it were, tuned to joy. I laughed often, talked much and incoherently, and at length overpowered by whiskey and jollity, sunk to rest where I was sitting.

" On awakening next morning, I was so ill that I could scarcely move; and I had began to think some of the late events rather a dream than a reality, just as the serjeant enters

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sun at the appointed time is obliged to submit to the superior dominion of the night.